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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/688,657

10/17/2003

Qiang Luo

89038PCW

1222

1333 7590 04/23/2007  
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EXAMINER

HENN, TIMOTHY J

ART UNIT

PAPER NUMBER

2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/688,657	<b>Applicant(s)</b> LUO, QIANG	
	<b>Examiner</b> Timothy J. Henn	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 04 April 2007 have been fully considered but they are not persuasive. Applicant argues that Prentice does not disclose performing cross-talk correction on that basis that the Parulski article does not disclose charge diffusion crosstalk or cross-talk caused by migrating electrons. The examiner notes that crosstalk caused by charge diffusion/migrating electrons is an inherent cause of color cross-talk in image sensors (see for example Applicant's "Background of the Invention"). While Parulski does not specifically disclose that his system can be used to reduce color cross-talk, Prentice recognizes that such a system can be used to provide simultaneous color correct and cross-talk correction as disclosed in Paragraphs 0039 and 0052. Prentice discloses using coefficients in the form of a 3x3 matrix in order to correct for cross-talk in the sensor as well as providing color correction in the form of saturation and hue corrections (Paragraphs 0039 and 0052). Therefore, in correcting for cross-talk in the image sensor, the system of Prentice would necessarily correct for cross-talk caused by charge diffusion/migrating electrons as claimed since charge diffusion/migrating electrons are a cause of cross-talk in image sensors. Since the rejection is based on Prentice and not Parulski, Applicant's arguments are not considered persuasive and the rejections based on the Prentice reference are maintained.

***Claim Rejections - 35 USC § 102***

Art Unit: 2622

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-19 are rejected under 35 U.S.C. 102(a) as being anticipated by Prentice et al. (US 2003/0030729).

**[claim 8]**

Regarding claim 8, Prentice discloses an apparatus for reducing charge diffusion crosstalk, comprising: means for inputting crosstalk coefficients for a first pixel of a first color for reducing diffusion crosstalk (Figure 5, Item 77 or Figure 6, Item 102); means for sampling the first pixel to produce a first measured pixel value and means for sampling the adjacent pixels to produce adjacent measured pixel values (Figures 5 and 6; RAW IMAGE DATA; Figure 1, CCD CLOCK DRIVERS and CCD TIMING GENERATOR); and means for applying the crosstalk coefficients to the first measured pixel and the adjacent measured pixel values such that crosstalk effects are reduced in the first measured pixel value (Figure 5, Item 90 or Figure 6, Item 104; Paragraph 0039 or 0052).

**[claim 9]**

Regarding claim 9, Prentice discloses adjacent pixels which are selected from a group consisting of pixels immediately surrounding the first pixel (e.g. Figure 4).

**[claim 10]**

Regarding claim 10, Prentice discloses adjacent pixels of different colors are of two colors (e.g. R and B) immediately surrounding the first pixel (e.g. G; Figure 4).

**[claim 11]**

Regarding claim 11, Prentice discloses an apparatus further comprising means for applying color correction coefficients (e.g. Hue and Saturation) to the first measured pixel value and the adjacent measured pixel values such that the first color filter spectral response is improved in the first measured pixel (Figure 3B; Paragraph 0039 or 0052).

**[claim 12]**

Regarding claim 12, Prentice discloses combining the crosstalk and color correction coefficients (Paragraph 0039 or 0052).

**[claim 13]**

Regarding claim 13, Prentice discloses combining the coefficients are combined in a matrix which is available prior to applying crosstalk correction (Paragraph 0039 or 0052).

**[claim 14]**

Regarding claim 14, Prentice discloses applying crosstalk coefficients in a motion mode using a LUT (Paragraphs 0056-0059). The examiner notes that a LUT does not use multiplier means or adding means, therefore the limitation of applying crosstalk coefficients "using no more than three multiplier means and no more than two adder means" is met by at least the motion mode processing path of Prentice.

**[claims 1-7]**

Claims 1-7 are method claims corresponding to apparatus claims 8-14.

Therefore, claims 1-7 are analyzed and rejected as previously discussed with respect to claims 8-14.

**[claims 15-19]**

Regarding claims 15-19, see claims 8-11 and 14 respectively.

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-7310. The examiner can normally be reached on M-F 11-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone

Art Unit: 2622

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJH  
4/6/2007



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**SUPERVISORY PATENT EXAMINER**  
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